

Floodplain Management: Cluster (Open Space) Development



Description

A cluster development is a planning technique that concentrates residential living units in a compact area by minimizing lot sizes, setbacks and frontage distances to maximize open space. A cluster development reduces impervious area and grading activities compared to conventional developments, which decreases the runoff from the site. Cluster developments can be an effective floodplain management strategy by maximizing the number of housing units in the area located outside of the floodplain while preserving the area within the floodplain.

Advantages

- ★ Reduce impervious surfaces, thereby reducing runoff peaks and volumes. Impervious area can decline as much as 35% compared to traditional developments.
- ★ Allows for higher density development, which reduces the cost to develop the property.
- ★ Reduces sedimentation in streams which otherwise increases future flood stages.
- ★ Reduces pollutant loads to the stream.
- ★ Preserves open space that increase infiltration, which may be used for flood storage and recreation.
- ★ Preserves wildlife habitat.
- ★ In many areas, cluster developments appreciate at a higher rate than conventional subdivisions due to the amenities that are typically located in these areas.
- ★ Using cluster developments throughout the watershed will reduce future flooding impacts.
- ★ Lincoln code allows for cluster developments through a Community Unit Plan (CUP) and/or a Planned Unit Development (PUD), which is currently an optional development practice.

Disadvantages

- ☹ May not be suitable for industrial developments that require larger buildings.

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- ☹ The general public may be reluctant to accept cluster development proposals; feeling that they may lead to more intense development, traffic or other local concerns.
- ☹ Open space must be maintained to provide optimum benefits.
- ☹ Additional resources may be required to maintain open space.

Implementation Considerations

- Local market factors
- Public Outreach Program
- Both mandatory and voluntary approaches can be used
- Existing cluster development code (CUP) may need to be revised to include other incentives for developers to use cluster design techniques

Example Communities

- City of Pittsburgh, Pennsylvania – Summerset Development
- City of Houston, Texas – The Woodlands New Community
- Montgomery County, Pennsylvania
- City of Grayslake, Illinois – Prairie Crossing
- Calvert County, Maryland – Mandatory Open Space Ordinance

References

Low Impact Development Center, Inc., www.lowimpactdevelopment.org

Low Impact Development Design Strategies, Prince Georges County, Maryland (EPA 841-B-00-003)

Open Space Development, United States Environmental Protection Agency, www.epa.gov/owow/nps/ordinance/openspace.htm

Post-Construction Storm Water Management in New Development & Redevelopment – Open Space Design, USEPA Fact Sheet, January 2002

Stormwater Manager's Resource Center, Center for Watershed Protection, www.stormwatercenter.net